Claims

1. A device for controlling an installation (01) of several units (02, 03, 04, 05), wherein a common control system (06) is assigned to several of the units (02, 03, 04, 05), and wherein the control system (06) has a central data memory (09), in which up-to-date actual values and/or up-to-date command variables are stored in the form of process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2), characterized in that the data memory (09) has a memory area for the process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2), whose own data structure can be designed with the use of a data set (F) describing the projected installation (01).

2. A device for controlling an installation (01) of several units (02, 03, 04, 05), wherein a common control system (06) is assigned to several of the units (02, 03, 04, 05), and wherein the control system (06) has a central data memory (09), in which up-to-date actual values and/or up-to-date command variables are stored in the form of process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2), characterized in that the central data memory (09) is in a signal connection with a process or computing unit (23) designed as a communication server (23), the communication server (23) itself is connected with several lower-order process units (24) which are designed to serve a network of a defined type, and the lower-order process units (24) are each connected with a control (08) of one or several of the units (02, 03, 04, 05).

3. The device in accordance with claim 2, characterized in that the data memory (09) has a memory area for the process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2), whose own data structure can be designed with the use of a data set (F) describing the projected installation (01).

4. The device in accordance with claim 1, characterized in that the data memory (09) is connected with the controls (08) of several units (02, 03, 04, 05) by means of at least one communications layer embodied as a higher-order process or computing unit (23).

5. The device in accordance with claim 4, characterized in that the process or computing unit (23) is embodied as a higher-order communication server (23).

6. The device in accordance with claim 2 or 5, characterized in that the communication server (23) has communication-specific information regarding the projected units (02, 03, 04, 05).

7. The device in accordance with claim 6, characterized in that the communication-specific information can be implemented in the communication server (23) via an interface by means of a configuration file (F').

8. The device in accordance with claim 2 or 4, characterized in that the connection takes place over at least one network (07, 278, 29).

9. The device in accordance with claim 1 or 2, characterized in that basic settings of the process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) can be implemented in the data memory (06) via the data set (F).

10. The device in accordance with claim 1 or 2, characterized in that the process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) in the data memory (06) can be read and/or refreshed from a control level (41), as well as from controls (08) of the units (02, 03, 04, 05).

11. The device in accordance with claim 1 or 2, characterized in that the data memory (09) is designed as a data server (09) with at least one open interface (15).

12. The device in accordance with claim 1 or 2, characterized in that the data memory (09) is designed for supporting an inter-process communication with an exchange of complex data structures.

13. The device in accordance with claim 11, characterized in that the interface (15) is designed for supporting an inter-process communication with an exchange of complex data structures.

14. The device in accordance with claim 1 or 2, characterized in that the data memory (09) is designed as a data server (09) with an object management in accordance with the COM (component object model)/DCOM (distributed component object model) standard.

15. The device in accordance with claim 2 or 4, characterized in that the process or computing unit (23) is designed for supporting an inter-process communication with an exchange of complex data structures.

16. The device in accordance with claim 2 or 4, characterized in that the process or computing unit (23) is designed for processing objects or process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) on the basis of an object management in accordance with the COM/DCOM standard.

17. The device in accordance with claim 4, characterized in that at least one lower-order process unit (24) is arranged and is designed to serve a network of a defined type.

18. The device in accordance with claim 17, characterized in that the process or computing unit (23) is connected with several lower-order process units (24), which in turn are each connected with one or several of the controls (08).

19. The device in accordance with claim 2, 17 or 18, characterized in that the lower-order process unit (24) is designed as a server (24), which is designed for supporting an inter-process communication with an exchange of complex data structures.

20. The device in accordance with claim 2, 17 or 18, characterized in that the lower-order process unit (24) is

designed for inter-process communication by means of COM/DCOM object management.

21. The device in accordance with claim 2 or 17, characterized in that the connection between the process or computing unit (23) and the lower-order process unit (24) is designed as a network.

22. The device in accordance with claim 2 or 17, characterized in that one or several process units (24) is or are embodied as arc net handlers.

23. The device in accordance with claim 2 or 17, characterized in that the connection between the lower-order process unit (24) and the controls (08) is embodied as a network (07, 28).

24. The device in accordance with claim 1, 2, 4 or 17, characterized in that the data memory (09), the process or computing unit (23) and/or the lower-order process unit (24) have an operating system, which supports a method for inter-process communication, which is designed for the exchange of complex data structures.

25. The device in accordance with claim 24, characterized in that NT4.0(R) (or higher) and/or Windows 2000(R) (or higher) are intended as operating systems.

26. The device in accordance with claim 2 or 4, characterized in that several lower-order process units (24)

based on different network types and/or protocols can be connected with the higher-order process or computing unit (23), each of which in turn is in respective signal connection with the units (02, 03, 04, 05) based on these different network types and/or protocols.

27. The device in accordance with claim 1 or 3, characterized in that a program section is provided in the data memory (09), by means of which the set-up of the data structure matched to the projected installation (01) is performed by means of the data in the data set (F).

28. The device in accordance with claim 1 or 3, characterized in that the installation is embodied as a printing press (01) with at least one unit (02, 03, 04) designed as a material feeding device (02), at least one designed as printing unit (03), as well as at least one designed as further processing device (04).

29. A method for controlling an installation (01) with several units (02, 03, 04, 05) and a data memory (09), wherein in an identifier space of the central data memory (09), which is configured in accordance with the projected installation (01), base setting values for process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) of the units (02, 03, 04, 05) are managed and stored, and a data exchange of process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) for the control and/or setting of the installation takes place between the data memory (09) and controls (08) of the units (02, 03, 04, 05), characterized in that the data

exchange between the data memory (09) and the controls (08) takes place via a higher-order process or computing unit (23) and several lower-order process units (24), the raw data maintained by the data servers (09) are converted in the higher-order process or computing unit (23) to the communication protocol required for the processes of the lower-order process units (24), and vice versa, and that the converted data are exchanged respectively with one or several of the controls (08) arranged downstream of the lower-order process units (24).

30. The method in accordance with claim 29, characterized in that on the one hand the process or computing unit (23) interprets data received from the control (08) and forwards them to the data memory (09), and on the other hand converts data to be transmitted from the data memory (09) into jobs, and issues them to the respective lower-order process unit (24) or control (08).

31. The method in accordance with claim 29, characterized in that initially the basic setting values for process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) of the units (02, 03, 04, 05) are implemented in the data memory (09) in that a data structure of the data memory (09) itself is configured using a configuration file (F, F') describing the installation (01).

32. The method in accordance with claim 29, characterized in that process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) from the data management unit (09) to

be transmitted are addressed by the process or computing unit (23), are converted into a job/data packet of a defined network protocol and are sent via the associated process unit (24) to the control (08) of the units (02, 03, 04, 05) involved.

33. The method in accordance with claim 29, characterized in that the data exchange between the data memory (09) and the process and computing unit (23 takes place in accordance with a CSMA/CD access method standardized in accordance with IEEE 802.3.

34. The method in accordance with claim 29, characterized in that the process or computing unit (23) embodied as a communication server (23) functions as an OLE client, which can receive objects or process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) from the data memory (09) embodied as an OLE server (09).

35. The method in accordance with claim 29, characterized in that the process or computing unit (23) embodied as a communication server (23) receives and/or processes the objects or process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) on the basis of object management in accordance with COM/DCOM standards.

36. A method for setting up a control system (06) of an installation (01) having several units (02, 03, 04, 05), wherein a selection of units (02, 03, 04, 05), as well as of

data characterizing the units (02, 03, 04, 05), are stored in a memory unit (17) as an object stock (19),

- the units (02, 03, 04, 05) relevant to the installation (01) to be projected and, if required, selectable specific embodiments, are selected from the object stock (19) with the use of software,

- the data characterizing the selected units (02, 03, 04, 05) and, if needed, selectable specific embodiments, are processed into at least one data set (F, F') by the software,

- and finally this at least one data set (F, F') is implemented in a data memory (09) of the installation (01) for setting up the control system (06).

37. The method in accordance with claim 36, characterized in that basic settings, process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) and/or program portions are stored and carried along in a selection-specific manner in the data set (F, F') as the data which characterize the units (02, 03, 04, 05).

38. The method in accordance with claim 36, characterized in that, using the data set (F, F') describing the installation (01) by means of the selected units (02, 03, 04, 05) and, if required, selectable specific embodiments, a data structure is created in the data memory (09), which is specifically matched to the realized installation (01).

39. The method in accordance with claim 36, characterized in that the data characterizing the selected

units (02, 03, 04, 05) and, if required, selectable specific embodiments, are implemented in the data memory (09) in that a data structure of the data memory (09) itself, which is specially matched to the installation (01), is first created, using the data set (F, F') characterizing the installation (F, F').

40. The method in accordance with claim 38 or 39, characterized in that the set-up of the data structure matched to the projected installation (01) takes place by means of a program portion provided in the data memory.

41. The method in accordance with claim 36, characterized in that in connection with the selection of the units (02, 03, 04, 05) and, if required, specific embodiments from the object stock (19), communication-specific information regarding the specific units (02, 03, 04, 05) and/or provided hardware components of the control system (06) are read out and are subsequently implemented in the control system (06).

42. The method in accordance with claim 41, characterized in that the communication-specific information is processed by the software into a data set (F'), which differs from the first data set (F), and this data set (F') is implemented in a higher-order communication server (23) for setting up the control system (06).

43. The method in accordance with claim 36, characterized in that the selection of the relevant units

(02, 03, 04, 05) and possibly selectable specific embodiments, takes place on a program surface (18).

44. The method in accordance with claim 36 or 43, characterized in that the installation (01) is projected in respect to the units (02, 03, 04, 05) to be considered by an appropriate selection of the objects (12, 13, 14), i.e. is appropriately assembled, from a multitude of represented, predefined objects (12, 13, 14) symbolizing the units (02, 03, 04, 05).

45. The method in accordance with claim 44, characterized in that, for multiplying a unit (02, 03, 04, 05) which is to be considered several times, the same object (12, 13, 14) is selected several times.

46. The method in accordance with claim 44, characterized in that, together with the objects (12, 13, 14), data, basic settings, process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) and/or program portions characterizing these objects (12, 13, 14) are adopted in a data set (F).

47. The method in accordance with claim 36 or 44, characterized in that predefined basic settings and/or process variables (12, 13, 14, 13.1, 13.2, 13.2.1, 13.2.2) for the units (02, 03, 04, 05), or for the objects (12, 13, 14) representing the units (02, 03, 04, 05), are changed as needed in the course of the selection.

48. The method in accordance with claim 36, characterized in that the data characterizing the units (02, 03, 04, 05) are stored in a data bank (17).

49. The method in accordance with claim 48, characterized in that when selecting the object (12, 13, 14), the data stored in the data bank (17) are transferred into the data set (F, F') in accordance with the object linking and embedding (OLE) data exchange method or the COM/DCOM standard.